Venesections for Hereditary Haemochromatosis

Venesections attract a Medicare Benefit if performed for the management of haemochromatosis, polycythemia vera or porphyria cutanea tarda (Item 13757)

Example Venesection Schedule for Hereditary Haemochromatosis

1. Iron unloading phase, target serum ferritin ~50μg/L
   - weekly venesection of ~7mL/kg (maximum 550mL) whole blood
   - ensure pre-venesection haemoglobin >120g/L
   - monitor haemoglobin (Hb) and serum ferritin (SF)
     - **Hb**: is it safe to remove more blood? delay for 1 week if pre-venesection Hb<120 g/L
     - **SF**: is it safe to remove more iron? monitor SF every 4-6 venesections, more often as SF approaches 100μg/L
   - it may take many months or even years to unload excess iron
   - oral supplements for vitamin B12 (5μg daily) and folate (500μg daily) support erythropoiesis during frequent venesections

2. Lifelong maintenance phase, target serum ferritin ~50-100 μg/L
   - venesections to maintain SF ~50-100 μg/L
   - highly variable between individuals, often in the range 2-6 venesections per year
   - check Hb before every venesection
   - monitor SF periodically – at least every 12 months, maybe every 2-6 months, highly variable
   - monitoring SF is the only way to ensure safe SF levels maintained – not too high, not too low

No Australian should suffer harm from haemochromatosis.
Venesection Procedure Prerequisites

- correct patient
- definite indication
  - haemochromatosis (C282Y homozygosity or C282Y/H63D compound heterozygosity) or clinical iron overload supported by FerriScan® MRI or liver biopsy
  - ie not for C282Y carrier with elevated serum ferritin and normal transferrin saturations (also appropriate for polycythaemia rubra vera and porphyria cutanea tarda)
- stable haemoglobin >120g/L
- serum ferritin above 25μg/L, usually above 50μg/L
- stable blood pressure systolic 110-160mmHg, diastolic 60-95mmHg
- stable pulse 50-100/minute
- ability to appropriately dispose of collected blood (clinical waste/biohazard)
- decent venous access – usually cubital fossa of the opposite side from the most recent venesection
- adequate pre-venesection hydration
- recent oral intake ie not fasting
- procedure has been explained
- consent has been obtained

Possible Complications

- haematoma
- hypovolaemia
- vasovagal syncope
- if patient becomes tachycardic, hypotensive, restless or clammy, stop procedure and review patient
- venous scarring
- phlebitis
- adverse reaction to lignocaine if used

How to perform venesection

Equipment

- blood pressure monitor
- gloves and goggles
- electronic scales to weigh bag
- blood donor bag with 18G needle attached, tubing loosely tied in 3 places (see right)
- needle guard if available (pale blue plastic rectangle – see right)
- tourniquet
- alco-wipes or chlorhexidine in alcohol 70%
- gauze squares
- cotton wool or gauze swab
- 3 strips of micropore tape
- stress ball or soft rolled bandage to squeeze
- if blood is collected from side-arm of blood donor bag for testing (haemoglobin and/or serum ferritin), will also need
  - blood collection tubes
  - pathology request form
  - 10mL syringe with sharp needle attached
  - kidney dish to place everything in

500mL blood weighs approx 600g
**Procedure**

- position patient in a relaxed sitting or reclining position on an examination couch with arm extended
- record baseline observations – pulse, blood pressure and hydration status
- if patient is hypotensive or has signs and symptoms of dehydration delay venesection until resolved
- collect equipment and prepare trolley, including:
  - clipping on needle guard, if available
  - if blood is collected for testing, getting additional required equipment
  - washing hands
  - putting on gloves and goggles
- offer patient local anaesthetic, if desired/required – administer subcutaneously at 1 cm below intended venesection site
- place a plastic-backed absorbent sheet under elbow
- place a plastic-backed absorbent sheet on electronic scales below patient level
- apply tourniquet and locate a good vein
- prep site using alco-wipes or chlorhexidine in alcohol 70%
- insert needle of blood donor bag
- when correctly positioned in vein, secure with 2 strips of micropore tape – 1 over tubing and 1 over needle insertion site
- place blood donor bag onto scales

- release tourniquet slightly
- check frequently that blood flow into bag is continuing evenly and fairly slowly
- the venesection should take 10-20 minutes
- if necessary, instruct patient to gently squeeze a stress ball or soft rolled bandage in hand of arm undergoing venesection
- monitor patient’s tolerance for procedure and assess for signs and symptoms of hypovolaemic shock
- release tourniquet or cuff when bag is at ordered weight, allowing for weight of bag
- make note of weight collected in patient’s record
- if required, collect blood from sampling port to be sent for testing
- give the patient a folded gauze square to hold in their non-venesection hand
- remove needle from vein
- ask patient to apply pressure with folded gauze squares for a few minutes

- hold needle higher than bag to allow blood to drain from tubing into bag
- tighten knots in tubing
- if needle guard is available, pull needle into it to remove sharps risk
- if needle guard is not available, be careful
- cut off needle into sharps container
- discard blood bag according to local policies for blood products (may require incinerating or transport to local hospital or local pathology provider for disposal)
- apply cotton wool or gauze swab then final strip of micropore tape
- apply a firm bandage and instruct patient to remove bandage in approximately 2 hours
- instruct patient to remain lying/sitting down for 15 minutes
- advise patient not to perform heavy lifting with that arm and to avoid strenuous exercise for 24 hours
- offer the patient a drink and recommend they drink plenty of fluid over the next 24 hours

Resources and References

